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AUTHOR Kubota, Mikio
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ABSTRACT

This study investigated English-as-a-Foreign-Language (EFL) teachers' patterns of verbal behavior concerning student errors, the relationship between error type and teacher treatment, and the effect of error treatment on subsequent student outcome. Subjects were students in seven EFL classes in Japanese high schools, taught by native Japanese speakers. Results show that: (1) the teachers ignored one-third of linguistic errors, repeated less than one-third of incorrect utterances of the students, and treated high-frequency errors often; (2) teachers used more explicit than implicit feedback; (3) other-correction predominated over self-correction; (4) phonological and morphosyntactic errors were likely to trigger a side explanation sequence than lexical errors; (5) both global and local errors resulted in a side sequence more frequently than a main sequence; and (6) reduced repetitions with emphasis on a key word, repetitions without change of error and explicit feedback were likely to result in success in modification of the student's previous utterance. Pedagogical implications are drawn. (MSE)

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Corrective Feedback by Experienced Japanese EFL Teachers

Mikio KUBOTA

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Corrective Feedback by Experienced Japanese EFL Teachers*

Mikio KUBOTA

ABSTRACT

The purpose of this study was to investigate the teachers' patterns of verbal behaviors toward student errors, the relationship between types of student errors and types of teacher treatments, and the effect of error treatment on subsequent student outcome. Seven EFL classes at senior high schools in Japan taught by Japanese teachers were examined.

The results of the study were summarized as follows:

(1) the teachers ignored one-third of linguistic errors, repeated less than one-third of incorrect utterances of the students and treated high-frequency errors very often,

(2) the teachers used more explicit feedback than implicit feedback,

(3) other-correction predominated over self-correction,

(4) phonological and morphosyntactic errors were likely to trigger a side sequence than lexical errors,

(5) both global and local errors resulted in a side sequence more frequently than a main sequence,

(6) reduced repetitions with emphasis on the key word, repetitions without change of error and explicit feedback were likely to result in success in modification of the student's previous utterance.

The pedagogical implications were also discussed.

INTRODUCTION

It seems to be a current tendency that many teachers and researchers treat producing incorrect forms as a positive phenomenon in which

learners are trying to form and test their interlanguage systems. In this respect, what reactions teachers will make to learner errors is considered a crucial aspect of language teaching, recognizing that making errors is the representation of the learning processes.

With regard to oral error correction in classrooms, Hendrickson (1978) raised the following five questions:

(1) Should learner errors be corrected?
(2) If so, when should learner errors be corrected?
(3) Which learner errors should be corrected?
(4) How should learner errors be corrected?
(5) Who should correct learner errors?

In this paper, I will focus mainly on questions (3) and (4) in order to investigate the characteristics of teachers' behaviors toward oral errors committed by students and their effects on student outcome.

One of the major functions concerning feedback in classrooms is error treatment. Schachter (1984) proposed the broad viewpoint of feedback as "negative input," which means "information provided to the learner that her utterance was in some way deviant or unacceptable to the native speaker" (p. 168). She states that negative input ranges "from explicit corrections at one end of a continuum, through confirmation checks and clarification requests, to at least two kinds of failures to understand at the other end" (p. 172). This view may be illustrated in Figure 1:

FIGURE 1: A continuum of negative input

(1)	(2)	(3)	(4)
explicit corrective feedback	a. confirmation checks b. clarification requests	implicit corrective feedback	indication of non-comprehension

Each type of negative input is explained as follows:

(1) explicit corrective feedback

This feedback breaks the main stream of conversation so that it is sometimes called the "side sequence" (Jefferson 1972). "It is a response to the form of the NNS's message" (Brock *et al.* 1986:232), as the following example shows:

S: I goed to New York yesterday.

T: You went. (Brock *et al.* 1986:231)

(2a) confirmation checks

A teacher confirms a student's message by saying, for instance, "You went yesterday?" (Brock *et al.* 1986:231) "Confirmation checks thay carry a double function—either to confirm understanding of the nonnative speaker or to provide a correction in a nonthreatening manner, or both" (Chenoweth 1981, as cited in Schachter 1984:173). The example above is functioned as implicit corrective feedback.

(2b) clarification requests

When a teacher does not understand hear a student or an utterance is not clear enough, the teacher requests that the student "either furnish new information or recode information previously given" (Long 1983:137). For example:

T: Could you say it again?

(3) implicit corrective feedback

This type of feedback is not manifested in Schachter (1984). This move is functioned as continuing the "main sequence" (Jefferson 1972) of the discourse. As shown in the following example, the error of the student's utterance is transformed to its correct form supplied by the teacher.

T: I went there yesterday too. (Brock *et al.* 1986:231)

(4) indication of non-comprehension

When a teacher fails to comprehend what a student says, the teacher responds to what is perceived ("unrecognized failure to understand" in Schachter's term) or produces "What?" or "Huh?" in response ("recognized failure to understand"); the former case may carry a function as a confirmation check or a clarification request, the latter as a clarification

request.

Many researchers have studied corrective feedback mainly in ESL and bilingual classroom settings. Holley and King (1971) suggested the guidelines to corrective procedures for teachers: rephrasing, cueing (=prompting), and generating sentences by students, after examining the classes of German as a foreign language. They found that cueing gave excellent results.

Allwright (1975) investigated the ESL teacher's treatment of learner error, which might be called the 'crisis point' for learners as well as teachers. He discovered that "teachers are typically rather imprecise in their treatment of learner error, tending to repeat the correct model rather than provide any obviously adaptive treatment, and tending to fail to explicitly locate errors for the learners" (p. 98), and that teachers are also inconsistent.

Fanselow (1977) analyzed error treatment by eleven experienced ESL teachers and found that they ignored around 33% of the errors in function words, while treatment of 94% of errors in content words occurred, and that providing the right answer or part of the answer after an error was the most popular treatment. Chaudron (1977b/1986) examined three teachers' French immersion classes, summarizing that all of them did not primarily correct linguistic errors in subjects other than French, that morphological errors were least treated by these teachers (only 18%), and that the ratio of success in correction was 39%.

To my knowledge, to date, there has been very little classroom research on corrective feedback in EFL classroom situations with NNS (nonnative-speaking) teachers (*e.g.*, Lucas 1975, Yoneyama 1982). Yoneyama (1982) collected the data of ten novice Japanese EFL teachers and concluded that giving the whole or part of correct answers occupied about 30% of all error treatments, the behavior of which was more frequent than that of giving indirect answers (13%) and repetition with rising intonation (10%). In this research, I will plan to examine the

verbal behaviors of corrective feedback by experienced Japanese (nonnative-speaking) EFL teachers in Japan.

PURPOSE OF THE STUDY

The main purpose of this study is to investigate the patterns of the behaviors. A second objective is to assess the relationship between types of errors that learners produce and corrective feedback that teachers supply. The last is to examine the effects of negative input on student talk. The following three research questions are proposed:

(1) Are there any fixed patterns that experienced teachers follow?
(2) What kinds of student errors elicit what types of teacher treatments?
(3) What kinds of negative input influence student outcome?

HYPOTHESES

In attempting to answer these three research questions, the following fourteen hypotheses have arisen. The first seven hypotheses are concerned with research question No. 1, the next four hypotheses with research question No. 2, and the last three hypotheses with research question No. 3.

H1: Experienced teachers ignore one-third of linguistic errors.

Previous studies show that the teachers' frequency for lexical, phonological, and morphosyntactic errors was 70.5% in French classes (Chaudron 1977b/1986) and 61.3% in pre-university and university ESL classes (Courchêne 1980). Consequently, it is predicted that experienced teachers have a great number of student errors corrected, presumably letting about one-third of errors pass.

H2: Experienced teachers correct proportionately more global errors than local errors.

The term 'global errors' is defined by Burt and Kiparsky (1972) as errors that significantly inhibit communication, while 'local errors' as

ones that do not cause problems of comprehension. It is hypothesized that experienced teachers may leave local errors untreated as long as the message is intelligible. On the other hand, error treatment is assumed to take place in the case of global errors, since they make utterances difficult or impossible to understand.

H3: Experienced teachers use more implicit corrective feedback than explicit corrective feedback.

Because explicit corrective feedback breaks the main sequence of communication when the linguistic forms of utterances are focused upon, it is expected that this feedback occurs less frequently than implicit corrective feedback with the ideas that teachers may try not to impede communication by giving spontaneous explicit corrective feedback, which may lead to face-threatening and discourage students to continue their talk, and that they attempt to make interactions more natural.

H4: There is no statistically significant difference in the frequencies of confirmation checks and clarification requests.

Here I pose the null hypothesis, because no theory or previous research has suggested a difference.

H5: Experienced teachers allow their students to self-correct more often than to other-correct.

Native speakers have a tendency to do their own correcting in ordinary L1 conversation: "self-repair predominates over other-repair" (Schegloff *et al.* 1977:361). It is hypothesized in the L2 classroom settings that experienced teachers recognize that frequent error correction "may inhibit and delay the development of self-monitoring and careful monitoring of the interlocutor(s)" (van Lier 1988b), so that experienced teachers give learners more opportunities to self-correct their own performances than to be corrected by others.

H6: Experienced teachers repeat less than one-third of incorrect utterances of their students.

"Repetitions are among the most common types of corrective feedback:

32% of repetitions out of corrective treatment acts in Salica's (1981) study and 15–20% or more of the time of repetition in Nystrom's (1983)" (Chaudron 1987:30). It is assumed that experienced teachers do not very often attempt to repeat erroneous forms, due to the fear that such a repetition may have a negative effect on the peer students. Since teachers repeat student utterances either with or without change of error, less than one-third of incorrect utterances are expected to be repeated.

H7: Infrequent errors are more often treated than frequent errors.

Chaudron (1987) calculated the median percentages of errors corrected, examining five previous studies (Salica 1981, Courchêne 1980, Chaudron 1977b/1986, Fanselow 1977, and Lucas 1975): "the rate of error treatment seems to be in a reverse relationship with the rate of error production, that is, the more a type of error is made, the less likely the teacher appears to be inclined to correct it" (Chaudron 1987:25), as Table 1 shows:

Table 1: The relationship between error production and error treatment

	Lexical errors	Phonological errors	Morphosyntactic errors
Error production	29%	11%	56%
Error treatment	54%	93%	49%

Following it, it is predicted that experienced teachers correct more infrequent errors than frequent errors.

H8: Lexical errors trigger a side sequence more frequently than other errors.

H9: Morphosyntactic errors result in a main sequence more frequently than other errors.

Brock *et al.* (1986:234) reported that "lexical errors were more likely than others to trigger a side sequence in which an attempt was made to

clarify the messages and that morphosyntactic errors, perhaps because of their lesser communicative significance, were more likely to permit the main line of discourse to be continued." Their findings lead to the formulations of Hypotheses 9 and 10.

H10: Global errors trigger a side sequence more frequently than a main sequence.

H11: Local errors trigger a main sequence more frequently than a side sequence.

Because global errors interfere with comprehension, it is assumed that global errors may trigger the breakdown of the main stream of conversation, that is, a side sequence, by supplying corrective feedback explicitly, so that teachers may expect that their students will pay attention to the errors. On the other hand, local errors are expected to permit the main sequence, because of a low degree of communication significance.

H12: Reduced repetitions with emphasis on the key word are more strongly related to success in revising the original utterance than simple or expanded repetitions without emphasis.

This hypothesis derives from Chaudron's (1977a) study in which he found a positive relationship between reduced repetitions and success (56.5%) and between emphasis and success (43.3%) and a low success ratio for expanded repetitions (13%). It is expected that the isolation of the error by reduction in length and saliency through emphasis (e.g., stress and question intonation) may lead to subsequent alternations in student talk.

H13: Clarification requests enable students to modify their outcome more frequently than confirmation checks.

It seems reasonable to assume that clarification requests may provide students with more opportunities to alter and/or add their original messages than confirmation checks, because it is plausible that students may simply respond to confirmation checks by saying "Yes/No" without modifying the previous erroneous utterances. Furthermore, it was found

in an experimental study of NS (native speaker)—NNS (nonnative speaker) dyads in non-classroom settings that "NNSs tended to modify their output most often when NSs signaled an explicit need for clarification rather than provided a model utterance for confirmation" (Pica *et al.* 1989:83).

H14: Explicit corrective feedback is more successful in triggering students' modified correct forms than implicit corrective feedback.

It is hypothesized that explicit corrective feedback would influence subsequent student productions to a greater degree than implicit corrective feedback. This is based on the assumption that students may notice the errors more by explicit feedback than by implicit feedback.

METHOD

Subjects

Seven EFL classes at senior high schools in Japan taught by Japanese teachers were studied in this research. These intermediate-level courses were chosen by random sampling. They were all experienced teachers (all males),[2] each with more than ten years of teaching EFL in Japan.

Each teacher taught his regular class, which had about forty-five Japanese students on average, who had been studying English only in foreign language classroom situations. The length of every lesson was held constant—approximately 50 minutes.

All seven teachers used the textbooks or materials on which classroom activities were based, and conducted those typical lessons that seemed to emphasize an eclectic approach to language teaching, including a variety of activities such as comprehension of the text, oral practices, explanations of target points, reading practices and textbook exercises. Regarding class format, each class was filled with teacher-fronted activities, so that it may have had almost similar classroom structures.

Data collection and analysis

Every lesson was videotaped by the technicians. After student errors were identified, interactions containing errors were transcribed by watching the videotapes. The analysis was done by calculating the frequencies of types of errors and negative input. In this research, the significance level of a statistical analysis was set at $\alpha < .05$.

Definitions

An 'error' was defined as "the use of a linguistic item in a way in which a fluent or native speaker of the language regards as showing faulty or incomplete learning" (Richards *et al.* 1985:95). In this research, errors were classified as the following types: lexical, phonological, and morphosyntactic errors. Discourse errors, content errors, and comprehension errors (misunderstanding of a speaker's intention or meaning) were excluded in this analysis for the purpose of this study, which only dealt with linguistic aspects of student errors. 'Corrective feedback' is referred to as any behavior of supplying an appropriate item in response to what is perceived and interpreted to be an error committed by students (Chun *et al.* 1982:538).[4]

RESULTS

H1: Experienced teachers ignore one-third of linguistic errors.

The teachers corrected 67 errors (70.5%) out of a total of 95 student errors (all errors were treated in English): this means about one-third of errors (n=28) were ignored. Since there was no statistically significant difference between the frequencies of error ignorance: 28 (raw number) vs. 33 (hypothetical number) ($\chi^2 = 0.4$, df = 1, $p > .25$ (ns); $\chi^2_{(critical)} = 3.8415$), the result was supportive of this hypothesis.

H2: Experienced teachers correct proportionately more global errors than local errors.

10 global errors (71.4%) were treated out of a total of 14 errors, while

the teachers corrected 57 local errors (70.4%) out of 81 errors. Owing to the unequal number of each error type, the weighting was established by a factor of 5.8: 58 global errors were treated. Therefore the frequency of error treatment of global errors is approximately equal to that of local errors. Contrary to my expectations, the data disproved this hypothesis ($\chi^2 = 0.008$, df = 1, $p > .25$ (ns); $\chi^2_{critical} = 3.8415$).

H3: Experienced teachers use more implicit corrective feedback than explicit corrective feedback.

Explicit feedback occurred 53 times, whereas implicit feedback was used only 7 times. This indicates that the teachers provided explicit corrective feedback 7.6 times as frequently as implicit feedback ($\chi^2 = 35.2$, df = 1, $p < .001$). This hypothesis was not supported.

H4: There is no statistically significant difference in the frequencies of confirmation checks and clarification requests.

A total of 6 clarification requests were produced by the teachers and only 1 confirmation check occurred. A statistically significant difference between these frequencies was not found, using the Yates's correction factor ($\chi^2 = 2.28$, df = 1, $p > .05$ (ns); $\chi^2_{critical} = 3.8415$); therefore this hypothesis was confirmed.

H5: Experienced teachers allow their students to self-correct more often than to other-correct.

The students self-corrected their production 6 times, while other-correction occurred 67 times: there were 11.7 times more other-corrections than self-corrections ($\chi^2 = 168.92$, df = 1, $p < .001$). This hypothesis was not sustained.

H6: Experienced teachers repeat less than one-third of incorrect utterances of their students.

The teachers repeated 11 incorrect utterances of the students. This occupied 16.4% (less than one-third) out of all error treatments. The result clearly provided support for this hypothesis.

H7: Infrequent errors are more often treated than frequent errors.

As shown by the data in Table 2, of a total of 95 errors, 8 lexical errors (8.4%), 44 phonological errors (46.3%), and 43 morphosyntactic errors (45.3%) were produced. The number of errors corrected was: lexical=4 (50%), phonological=35 (79.5%), and morphosyntactic=28 (65.1%). Since there was a positive correlation, the data was not supportive of the hypothesis ($r=0.87$, $df=1$, $p>.05$ (ns)).

Table 2: Frequency of error production and error treatment

	Lexical errors	Phonological errors	Morphosyntactic errors
No. of errors	8 (8.4%)	44 (46.3%)	43 (45.3%)
No. of error treatment	4	35	28
Ratio of error treatment	50%	79.5%	65.1%

$r=0.87$, $df=1$, $p>.05$ (ns)

H8: Lexical errors trigger a side sequence more frequently than other errors.

Lexical errors resulted in 2 main sequences and 2 side sequences. This result found no support in this hypothesis ($\chi^2=4.84$, $df=1$, $p>.05$ (ns), using the Yate's correction factor; $\chi^2_{critical}=3.8415$).

H9: Morphosyntactic errors result in a main sequence more frequently than other errors.

Morphosyntactic errors triggered 21 side sequences and only 3 main sequences; this data was contrary to my expectations. The hypothesis was rejected by the data ($\chi^2=0.25$, $df=1$, $p>.05$ (ns), again using the Yate's correction factor; $\chi^2_{critical}=3.8415$).

H10: Global errors trigger a side sequence more frequently than a main sequence.

8 side sequences and no main sequences were triggered by global errors. This result was supportive of the hypothesis, using the Yate's correction factor ($\chi^2=6.12$, $df=1$, $p<.025$).

H11: Local errors trigger a main sequence more frequently than a side

sequence.

Local errors were found to result in 5 main sequences and 48 side sequences. This result was against my expectations, providing no support for the hypothesis, although the difference itself was statistically significant ($\chi^2 = 34.88$, df = 1, $p < .001$).

H12: Reduced repetitions with emphasis on the key word are more strongly related to success in revising the original utterance than simple or expanded repetitions without emphasis.

Table 3 shows reduced repetitions with emphasis resulted in 15 successes (83.3%) of 18, while simple or expanded repetitions without emphasis triggered only 3 successes (12.0%) of 25. The raw number of reduced repetitions with emphasis was weighted by a factor of 1.39, so that the adjusted number of successes was 20.85. The difference was statistically significant ($\chi^2 = 13.35$, df = 1, $p < .001$).

Table 3: Relationship between types of repetitions and successes

	Reduced repetitions		Simple expanded repetitions	
	with emphasis	without emphasis	with emphasis	without emphasis
No. of repetitions	18	7	17	25
No. of success	15	3	4	3
Success ratio	83.3%	42.9%	23.5%	12.0%

H13: Clarification requests enable students to modify their outcome more frequently than confirmation checks.

5 (83.3%) out of 6 clarification requests succeeded in modifications but there was no modification (0%) out of 1 caused by a confirmation check. This revealed that this hypothesis was not supported by the data ($\chi^2 = 3.2$, df = 1, $p > .05$ (ns), using the Yate's correction factor; $\chi^2_{critical} = 3.8415$).

H14: Explicit corrective feedback is more successful in triggering

students' modified correct forms than implicit corrective feedback.

20 (37.7%) out of 53 explicit feedback were successful in triggering the modified utterances, whereas none (0%) of 7 implicit feedback was successful. The difference was statistically significant ($\chi^2 = 10$, df = 1, $p < .005$).

DISCUSSION

Regarding research question No. 1, which deals with patterns of teachers' behaviors, only three out of seven hypotheses were confirmed. The first interesting finding is a high rate of error treatment: about two-thirds of linguistic errors were treated (Hypothesis 1). This implies that the teachers were very sensitive to linguistic forms and were trying to supply a certain kind of information that "something has gone wrong in the transmission of a message" (Schachter 1982:183). It may be the case that such EFL contexts as those in Japan put an emphasis on formal aspects of the target language, which stimulates feedback on the spot very often. In addition, the data show that whether an error was global or local, the teachers had about the same rate of error treatment (71.4% vs. 70.4%, respectively), which runs contrary to Hypothesis 2. It seems that the experienced teachers did not have different behaviors toward these two types of errors, which affect comprehensibility differently. The reason for this may be that the teachers in this study did not weigh the degree of "error gravity" (James 1974, as quoted in Ellis 1990:54) or did balance the rates of treatments of both types, recognizing the error gravity. I cannot, however, conclude the validity of either claim, since interviewing every teacher was beyond the scope of this study.

The hypothesis about the inverse proportion between the rate of error production and the rate of error treatment was not confirmed either (Hypothesis 7): there was a tendency that high-frequency errors such as phonological and morphosyntactic errors were treated more frequently

than low-frequency errors, namely lexical errors, in this research (see Table 2). This result supports Cohen's (1975:415) and Hendrickson's (1978:392) principle of correcting errors that occur frequently. The teachers appeared to consider frequent errors to be worth treating. It should be noted that phonological errors were most frequently treated in this study (79.5%), just as Hamayan (1980, as cited in Nystrom 1983: 186) reported that adult ESL classroom teachers tended to explicitly correct phonological errors.

The next disappointing result was that experienced teachers reacted to errors with much more explicit corrective feedback than implicit feedback (Hypothesis 3). Since pedagogical focuses in EFL classrooms tend to be on form rather than meaning, the teachers did not allow natural and smooth interactions without intervention by a side sequence. Moreover, surprisingly enough, more clarification requests (n = 6) were made by the teachers than confirmation checks (n = 1), the result of which proved no statistically significant difference between them (Hypothesis 4). It should be noted that the number of these two interactional adjustments by the teachers was extremely low. One explanation may be taken into account — the amount of free communication is limited in EFL classrooms. Most interactions are predetermined and controlled by teachers and textbooks, whereby students are, to a great extent, liable to produce textbook-based utterances, which teachers can expect them to use. Because teachers were easily able to understand students' communicative intent in that process, the teachers did not need to produce many clarification requests. Pica and Long (1986) reported that in ten ESL classrooms teachers used only 13 confirmation checks and 18 clarification requests, although they were directed at any classroom interactions, which included student errors. Hence, the low frequencies of two interactional adjustments are characteristic of classroom talk, which is completely different from informal, noninstructional NS–NNS conversation that contains very high frequencies, presumably because of the two-way flow of unknown informa-

tion (Pica and Long 1986:89).

The result of Hypothesis 5 shows that other-correction predominated over self-correction (67 vs. 6, respectively). As Fanselow (1977) found that students' self-correction occurred for almost 4%, classroom talk rarely contains "self-completed" reformulations of student talk whether it is "self-initiated" or "other-initiated" (see Kasper 1985:201). The reasons for this may be as follows:

(1) Students are not yet fully competent users.

(2) Pedagogical orientation justifies the overt correction.

(3) Students are members of the classroom community, which has its own rules as to what is appropriate and what constitutes face threat (van Lier 1988a:184).

Even though the classroom situation differs from L1 natural conversation in many respects, it is recommended that teachers let students do their own correction (van Lier 1988a:184)[4] so that a non-threatening atmosphere will be created and students may acquire "strategic competence" (Canale and Swain 1980: 30) — without which no one could express themselves fully in the target language especially when communication breaks down, nor could any one really become a competent speaker. The small amount of self-correction may be due to the lack of wait time. "One way to promote such self-repair may be through increased wait time. When a learner makes an error, or hesitates, the teacher may pause briefly rather than immediately pouncing on the learner to correct. This gives the learner a chance to self-monitor and self-correct" (van Lier 1988c:5). In addition, in the process of self-correction, students may ask teachers or peer students for help; this communication strategy, termed as "appeals for assistance" (Tarone 1981) would be very beneficial.

The hypothesis that experienced teachers repeat less than one-third of incorrect utterances of their students was supported (Hypothesis 6); such repetitions accounted for 16.4% of all error treatments. This shows that

teachers did not repeat incorrect utterances very often. Chaudron (1977a: 42) argues:

> REPETITION with NO CHANGE might also be mistrusted, in part due to fears that it would model the incorrrect utterance, but the potential negative and contrasting information it can provide demands that it be considered as a viable type of feedback.

The low frequency of such a repetition may represent the teachers' attitude toward the negative influence.

As to research question No. 2, which concerns itself with the relationship between types of student errors and types of teacher treatments, the data found support for only one hypothesis of four. A significant relation between lexical errors and the sequence types was not established, and phonological and morphosyntactic errors were found more likely to trigger a side sequence than lexical errors (Hypotheses 8 and 9), contrary to my expectations. There are two possible interpretations to this phenomenon. First, the teachers did not have a strategy to deal with a main sequence, which only shared 8.9%, as compared to 91.1% of a side sequence. In order for the main line of discourse to be continued, teachers should pay much attention to the flow of communication, which appears to be rather difficult for NNS teachers, who may not have as high "discourse competence" (Canale and Swain 1980) as NS teachers. As Cohen (1975:415) states, "[h]ow easy it is for the teacher to correct the error may depend on the teacher's competence..." Second, it seems that teachers believe that a role of a teacher is to give clear information by overt correction. I cannot, however, conclude that this is a valid argument, because asking each teacher preferences was beyond the scope of this research.

As predicted by Hypothesis 10, global errors triggered a side sequence more often than a main sequence, but local errors had a strong relationship with a side sequence, which rejected Hypothesis 11. This result indicates that the teachers did not let interactions go on smoothly, even

when student errors were local enough to be intelligible. EFL classrooms may be characterized as having this tendency: a side sequence is preferred whether an error may be global or local.

With regard to research question No. 3, which aims at examining the observable effects of negative input on subsequent talk, two of three hypotheses were supported. A positive relationship between reduced repetitions with emphasis and success in modification was found (Hypothesis 12). This very important finding suggests that in order to make the occurrence and locus of an error clear, such strategies as reduction in length and phonological emphasis work very well, whereby students are likely to succeed in modification.

A post-hoc analysis of the data reveals that repetitions without change of error led more to success in modification than repetitions with it: the former type triggered a 45.5% success ratio (5 successes out of 11) and the latter 35.7% (20 successes out of 56). The difference was found to be statistically significant ($\chi^2=5.73$, df=1, $p<.025$). This implies that teachers' repetitions without change are more advantageous in triggering modification. However, it should be taken into consideration that if an incorrect form is beyond the current level of the student's competence, repetitions without change may not work very well, since a student does not know a linguistic rule. Surprisingly enough, every error treatment involved a certain kind of repetition of student utterances in this research.

The next important point concerns the result that explicit corrective feedback was more successful in triggering modification than implicit feedback: 37.7% of explicit feedback elicited success, while none of implicit feedback led to improved performance (Hypothesis 14). This demonstrates that students are more likely to reformulate their interlanguage system by explicit feedback, which will signal the need for modification more easily. As Chaudron (1977b: 1986:80) points out:

> For most of the corrections, the rate of students' correct responses is influenced either by the teachers' persistence in obtaining a correct

response or by the students' voluntary attempts to recapitulate the teacher's correction.

Taking these factors into account, it is recommended that teachers be aware of the well-balanced distributions of explicit and implicit feedbacks; the former tends to lead to student modification and the latter renders communication more natural and avoids face threat.

The "Notice-the-gap" principle which may be deemed significant for language acquisition was proposed by Schmidt and Frota (1986:311): a learner will acquire the targetlike form if and only if the gap between a nontargetlike form i and a targetlike form $i + 1$ is noticed. Hence, such behaviors as reduced repetitions with emphasis and explicit feedback may contribute to the process of "consciousness-raising" (Sharwood Smith 1981) and may help students notice the gap (see Edmondson 1985: 165).

The last key issue is that 83.3% of clarification requests enabled students to modify their previous output, the ratio of which was completely higher than that of confirmation checks (0%) (Hypothesis 13). Although this difference was not significant, it was obtained at $p < .1$, so that there may be a trend in that direction. A clarification request seems to signal students to recognize that they have committed errors, which they may feel should be eradicated in their next turn.

"Processing time" (Schachter 1984:179) is a very crucial factor of whether a student will be able to formulate a new hypothesis. "A learner may require a certain amount of time to make use of negative input, and in the interim will continue to operate with old, as-yet-unmodified hypotheses" (Brock *et al.* 1986: 235 & 236). A post-hoc analysis shows that only 2 unsuccessful cases of modifications included processing time and there were 40 instances of no processing time given to the students after providing feedback. The teachers tended to continue their own turn. Therefore, it is suggested that teachers increase the chances of students' processing negative input and the amount of processing time.

CONCLUSION

Of a total of fourteen hypotheses, only six hypotheses were confirmed by the results of this study. What emerges from it is the following implications for language teaching:

(1) A good balance between treatments of global errors and of local errors must be maintained.

Although Burt (1975) and Ellis (1990) suggest correcting global errors primarily, it should be recommended that treatments of both error types are equally important, since communication will not become intelligible by and large without correcting global errors and a local error is a precious point where the reformulation of the interlanguage rule is attempted mostly by teachers' explicit feedback. However, an ideal proportion of each error treatment will be taken into account in further investigations.

(2) Correct high-frequency errors.

It was found that teachers treated high-frequency errors very often. Correction of high-frequency errors may be useful to learners, because students are supplied with much information on erroneous messages, which may help to eliminate errors.

(3) Provide students with more opportunities to do their own correcting.

For that purpose, teachers are recommended to increase wait time, and students may be trained to have such a strategy as appealing for assistance.

(4) Teachers should keep in mind a good balance between explicit feedback and implicit feedback.

The results of this study suggest that explicit feedback tends to prod the students to alter the interim grammar and implicit feedback is likely to let the communication flow smoothly.

(5) Teachers should remember that reduced repetitions with emphasis are very powerful in triggering the subsequent alternations and

that repetitions without change of error might result in success in modification more frequently than repetitions with it.

It seems reasonable to suggest that reduced repetitions with emphasis and without change of error are the most successful feedback.

(6) Teachers should try to help students notice the contrast between students' use of form and the correct form by providing explicit feedback and reduced repetitions with emphasis.

(7) It is important for teachers to notice that clarification requests have a significant effect on students' modifications of their output.

(8) Give students more chances to make use of negative input and increase processing time.

This research is clearly limited by the small number of classrooms examined—only seven classes and the lack of reliability tests on identifying and categorizing errors and negative input.

Further research should examine a relationship between corrective feedback and acquisition from longitudinal perspectives, which unfortunately is not within the scope of this study. The students' modifications of their previous messages may be tentative in the sense that students may simply have repeated teachers' feedback without any cognitive processing. Furthermore, as Brock *et al.* (1986:236) point out, no effect of corrective feedback in the short term does not necessarily mean that it does not exist over time. Whether "errors that receive negative cognitive feedback are likely to defossilize" (Vigil and Oller 1976) remains at issue. How task types and language proficiency levels of students may influence error treatment should also be investigated.

The ways to eradicate errors from learners' perspectives are suggested by Johnson (1988:91): (1) the desire or need, (2) to know what the correct behavior looks like, (3) to recognize that the performance is flawed, and (4) the opportunity to perform in real conditions. Therefore, "[e]rror treatment is not a manipulative process—rather a process of negotiation, one of several ways in which the teacher and the learners collaborate in

managing interactional tasks in the classroom" (Ellis 1990: 74). This point of view will stimulate more serious classroom research in the future.

NOTES

* This is a revised version of papers presented at the 4th conference of the SLA Research Society, held in Tokyo on March 2, 1991 and the annual conference of the English Language Education Society of Japan (JELES), held in Tokyo on March 29, 1991.

1. This hypothesis does not concern whether repetitions are with or without change of error.
2. It is possible that the gender of the teachers studied may have introduced an uncontrolled variable. Through my observations and data analyses, however, I found no crucial difference in the gender variable.
3. Nonverbal types of corrections (*i.e.*, the teacher points to an underlined word on the blackboard) were not included in this study (see Chaudron 1977b/1986:66).
4. Schmidt and Frota (1986) found that R's self-correction in natural interactions outside classrooms had no effect on his interlanguage development. The relationship between self-correction and acquisition was beyond the scope of this research, since no longitudinal data was collected.

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(学習院高等科)